

Nanotechnology patenting activity in Greece

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Abstract:

Industrial property, especially patents, are an indicator of technological innovation. Since innovation plays a crucial role in a nation's progress, it is essential to analyze patents in national level, in order to provide researchers and policy makers with useful information. Nanotechnology is a rapidly developing field since the 1980s, nevertheless the most significant period of nanotechnology development begins at 2000 [1].

In this work, we have identified, collected and analyzed published patent applications relevant to nanotechnology, filed in the Hellenic Industrial Property Organization (OBI), since 2000. It should be noted that patent applications are published after a period of 18 months from the earliest priority or filing date, therefore explaining the low data retrieved after 2021 and the focus of the present study in the period 2000-2021. During this process, we excluded applications by foreign applicants, so that conclusions are based on the Greek R&D activity and innovation.

In our search queries, we used a combination of keywords and classification codes in order to minimize background noise and retrieve as accurate results as possible. The queries were performed in the internal database of OBI as well as in the EPO database Espacenet and the documents retrieved were 175 in total.

Results indicate that patenting activity in the field of nanotechnology in Greece has been following an increasing trend over the years. However, a decreasing tendency is observed in the years 2020-2021, which could be attributed to delays in R&D projects due to the coronavirus pandemic. The patent output regarding the applicant affiliations suggests that 38,3% of the patent activity is coming from universities and institutes, while- individual applicants account for the 37,1% of the activity, followed by 22,3% coming from companies and 2,3% from collaborations between universities/institutes and companies. Patents are classified in one or more technical fields according to their content. Most nanotechnology patent applications in Greece are classified in fields related to medicinal preparations.

As the number of patent applications seemed limited, we have performed an indicative comparison between applications classified in the fields of medical science and scientific publishing retrieved from the database Pubmed. Results revealed an important number of scientific articles contrary to that of patent applications, suggesting that there is still room for patenting in the field of nanotechnology in Greece.

[1] A.-P. Wang, et al. *Nanotechnol Rev* 7(3), 233 - 245 (2018)